

DELAWARE - 2009 FOREST HEALTH HIGHLIGHTS



The Resource

Delaware's forests presently cover approximately 371,000 acres, roughly one third of the land area in the State. Delaware has experienced a rapid conversion of forests and agricultural lands to residential and other urban uses since the 1980s.

Weather Conditions

Delaware experienced a very wet spring in 2009. However, whereas summers were excessively dry from 2006 through 2008, Delaware did not experience drought conditions during the summer of 2009.

Forest Pest Issues

gypsy moth larva



Gypsy Moth

Ground surveys in the fall of 2008 found lower egg mass counts than in previous years. In June 2009, aerial surveys found about 440 acres of gypsy moth defoliation, all in the Great Cypress Swamp area in southern Sussex County. This acreage was less than was detected in 2008, and may indicate that the upward trend in gypsy moth activity is of less concern than had been feared. Two consecutive wet springs may have led to increased larval mortality caused by the parasitic fungus *Entomophaga*.



Southern Pine Beetle (SPB)

An aerial survey of the entire southern portion of the State in June 2009 revealed no significant SPB hot spots. Delaware again participated in the Southwide Southern Pine Beetle Pheromone Study. Beetle counts from four pheromone-baited Lindgren funnel traps indicate the population is at a low or declining level. It is worth noting that Delaware had several extremely cold days in late winter, where temperatures were around zero degrees F.

Emerald Ash Borer (EAB)

Ash represents only about 1% of Delaware's rural forests but is a significant component of the urban forest in some areas. Several colonies of *Cerceris fumipennis*, a native wasp that preys on Agrilids, were located in late summer 2009, the first report of this species in Delaware. In 2010, a bio-surveillance survey will be initiated to survey for EAB using these colonies.



Sirex Woodwasp (*Sirex noctilio*)

Sirex noctilio presents a threat to loblolly pine, the mainstay of the forest products industry in southern Delaware. In 2009, fourteen Lindgren traps baited with a *Sirex noctilio* blend were hung at seven sites. *Sirex* has yet to be detected in Delaware, although some native Siricids were collected.



Other Insects

In 2009, service foresters reported light to moderate damage from sawflies, bagworm moth, scale insects, eastern tent caterpillar, and fall webworm.

Disease Concerns

Bacterial Leaf Scorch (BLS)

After extensive statewide surveys in 2006 and 2007, this disease is known to be common throughout Delaware in both urban and traditional forest settings. In urban areas, pin and northern red oaks are primarily affected. In rural woodlots, the disease has been confirmed in scarlet, black, northern red, and southern red oaks.



In 2009, permanent plots in Blackbird State Forest were re-visited in the second year of a long-term study to quantify losses associated with this disease in rural woodlots.

Hypoxylon Canker (*Hypoxylon atropunctatum*)

Widespread mortality due to Hypoxylon canker was again seen throughout the state. This pathogen causes disease only in stressed trees. Drought stress from 2006 through 2008 predisposed trees to infection, and the effects are still being seen. While many species were affected, oaks, especially southern red, white, and black, were most damaged. Service foresters reported that this was the single most common damaging agent in red oaks inspected during calendar year 2009.



Blackbird State Forest. Jim told the group that he has seen considerable mortality of black and red oaks, and has been selling dead trees as firewood to offset losses. Clearly, BLS presents a significant and ongoing threat in the mid-Atlantic region, in both the urban and traditional forest settings.

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Forest Health Monitoring

Deer Exclosures

Whitetailed deer herds in Delaware benefit from near-ideal habitat and mild winters. As a result, deer populations have reached very high densities. Deer browsing has been documented as a factor affecting understory composition and ingrowth in hardwood forests. A study was initiated in 2005 to quantify the browse effect. Eighteen fenced exclosures have been installed in oak forests throughout Delaware. Measurements are taken at each exclosure and its accompanying control plot. Early results indicate significant differences between fenced and control plots, in as little as three years, in areas where deer density is greater than 100 per square mile.



Joint Forest Health Cooperators Meeting

The annual meeting of forest health cooperators from our region was held at the Atlantic Sands Hotel in Rehoboth Beach in September 2009. In addition to updates on forest health activities from member states, the agenda included discussions on several exotic species that threaten forest health, the State Assessment and Strategies document due in June 2010, and the grant process. Attendees also visited a bacterial leaf scorch (BLS) study site. After observing symptomatic, declining, and dead trees, the group heard from Jim Dobson, Northern Regional Forester, about BLS-related mortality at



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